

12. (Amended) The filtering apparatus as claimed in claim 11, wherein the filtering module is arranged such that the channels in the bottom of the cloth are directed according to a structure of the filtering module.

13. (Amended) The filtering apparatus as claimed in claim 11, wherein the filtering module is arranged such that the channels in the bottom of the cloth are directed such that the channels lead the filtered liquid to openings in the filtering element.

REMARKS

Claims 1-14 are pending. By this Amendment, claims 1, 7 and 11-13 are amended. The support for the amendments to claims 1, 7 and 11 are found in para [0017] of the specification. The amendments to claims 12 and 13 do not change or narrow the scope of claims 12 and 13. No new matter has been added.

The attached Appendix includes marked-up copies of each rewritten claim (37 C.F.R. §1.121(c)(1)(ii)).

Applicant appreciates the courtesies shown to Applicant's representatives by Examiners Ocampo and Walker during the March 17, 2003 personal interview. The points discussed are incorporated into the remarks below and constitute the Applicant's record of the interview.

For at least the following reasons, Applicant respectfully submits that claims 1-14 are allowable. Reconsideration of claims 1-14 is respectfully requested.

I. REPLY TO REJECTIONS

On page 2, item 2 of the Office Action, claims 12 and 13 are rejected under 35 U.S.C. §112, second paragraph. Specific language is cited as the basis for this rejection. Claims 12 and 13 are amended to obviate the rejection. Withdrawal of the rejection of claims 12 and 13 is respectfully requested.

On page 3, item 4 of the Office Action, claims 1, 3, 4, 6-9 and 11-13 are rejected under 35 U.S.C. §102(b) over U.S. Patent No. 5,180,409 to Fischer. The rejection is respectfully traversed.

Applicant submits Fischer fails to disclose a filter cloth comprising a filtering portion having a structure and density according to desired filtering characteristics for separating liquid from a mixture consisting of solids and liquid, and an underside of the filter cloth that comprises substantially parallel yarns that are thicker than the rest of the yarns of the filter cloth, and the thicker yarns are placed at predetermined intervals defined by the other yarns of the filter cloth extending parallel thereto to form parallel channels therebetween to enable the filtered liquid to flow in the direction of the surface of the filtering element between the filtering portion of the filter cloth and the filtering element, as recited in claim 1.

Further, Fischer fails to disclose a filtering module arranged on a filtering element as a filtering surface when liquid is separated from a mixture consisting of solids and liquid by means of a filtering apparatus...made of filter cloth, and the underside of the filter cloth is comprised of substantially parallel yarns that are thicker than the other yarns of the filter cloth, and that channels are formed between the thicker yarns by the placement of the thicker yarns at predetermined intervals defined by the other yarns of the filter cloth extending parallel thereto, wherein the liquid filtered by the cloth is allowed to flow in the direction of a surface of the filtering element, as recited in claim 7.

Furthermore, Fischer fails to disclose a filtering apparatus comprising a filtering module and a filtering element, where the filtering module is arranged on a filtering element as a filtering surface where liquid is separated from a mixture consisting of solids and liquid where, the filtering module is made of a filter cloth,...and an underside of the filter cloth comprises of substantially parallel yarns that are thicker than the other yarns of the filter cloth, and channels are formed between the thicker yarns by the placement of the thicker

yarns at predetermined intervals defined by the other yarns of the filter cloth extending parallel thereto, wherein the liquid filtered by the filter cloth is allowed to flow in the direction of a surface of the filtering element, as recited in claim 11.

Firstly, Applicant respectfully disagrees with the indication in the Office Action that the clause "for separating a liquid from a mixture of solids and liquids" are not distinguishing features. Fischer does not disclose a filter cloth for separating a liquid from a mixture consisting of solids and liquid nor can Fischer perform the function.

Fischer discloses a fabric that that can trap large quantities of soot (see col. 2, lines 16-18, and Figure 1). As shown in Figure 1 of Fischer, small pockets are left between fill yarns 16 that extend between support strands of each layer of the fabric 12. In Figure 2 of Fischer, tiny cells 18 are shown between the fill and support yarns. Such pockets and cells serve as traps for filtered particulate matter (see col. 4, lines 45-51). Such a fabric, intended to trap particulates, is not capable of separating solids from liquids. Arranging Fischer's fabric in solid-liquid filtering apparatus will cause the fabric to be replaced after each filtering step because the fabric would be clogged when the material is trapped inside the fabric.

Furthermore, Fischer fails to disclose substantially parallel yarns that are thicker than the rest of the yarns of the cloth and placed at a predetermined interval of the other yarns to form parallel channels between the thicker yarns. As shown in Figure 2 of Fischer, no channels are formed between thicker yarns 14 because fill yarns 16 occupy the space between the support yarns 14. Further, Fischer fails to disclose the thicker yarns placed at a predetermined interval of the other yarns.

Furthermore, Fischer discloses that the exhaust entering inlet 24 passes radially outwardly through perforations of outer tube 29 or radially inwardly through the layers of filtering fabric and perforation of inner tube 27 before exiting through its unblocked end (see col. 5, lines 2-10, and Figure 3). In fact, Figure 3 of Fischer shows the direction of flow (38)

as transverse relative to the direction of the surface. Consequently, Fischer fails to disclose a flow in the direction of the surface of the filtering element, or a flow between the fabric and the tube.

Therefore, claims 1, 7 and 11 are distinguishable from Fischer. Claims 3, 4 and 6, which depend from claim 1; claims 8-10, which depend from claim 7; and claims 12 and 13, which depend from claim 11, are likewise distinguishable over the applied reference for at least the reasons discussed above and for the additional features they recite. For example, Fischer fails to disclose a batt that has been needled to the filtering portion of an upper surface of the filter cloth, as recited in claim 6. Further, because Fischer does not show parallel channels, Fischer fails to suggest a filter cloth arranged such that channels in the bottom of the cloth are directed according to a structure of the filtering module, as recited in claims 8 and 12, or that the channels lead the filtered liquid to openings in the filtering element, as recited in claim 9. Withdrawal of the rejection of claims 1, 3, 4, 6-9 and 11-13 is respectfully requested.

On page 6, item 16 of the Office Action, claim 2 is rejected under 35 U.S.C. §103(a) as unpatentable over Fischer. The rejection is respectfully traversed.

Firstly, Applicant submits claim 2 is not a product by process claim. Secondly, Fischer fails to render obvious the subject matter of claim 2. Figure 1 of Fischer shows multiple layers. Specifically, Fischer shows top layer 12c, middle layer 12b and bottom layer 12a arranged orthogonal relative to each other. Because the only yarns shown are 14, 16 that make up all layers, they are not formed at the thicker yarns 14 which are in each layer (col. 4, line 65-col. 5, line 2). Fischer fails to show multifilament yarns parallel and moulded with the monofilament thicker yarns. The multifilament yarns 16 are transverse to the monofilament yarns 14 of each layer. Consequently, Fischer fails to suggest the features of

claim 2 and claim 2 is distinguishable from Fischer. Withdrawal of the rejection of claim 2 is respectfully requested.

On page 7, item 18 of the Office Action, claims 5, 10 and 14 are rejected under 35 U.S.C. §103(a) as unpatentable over Fischer in view of U.S. Patent No. 4,897,902 to Kavesh (hereinafter "Kavesh"). The rejection is respectfully traversed.

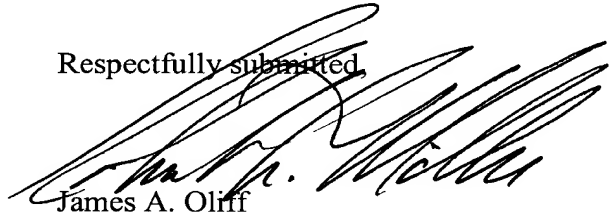
Applicant respectfully submits Fischer in view of Kavesh fail to render obvious the subject matter of claims 5, 10 and 14. Specifically, the proposed combination will render Fischer unsatisfactory for its intended purpose. Fischer discloses that special high-temperature-resistant material must be used (col. 3, lines 59-66). Because of their use as diesel particulate trap, Fischer's filters are ceramic fibers able to withstand high temperature (col. 3, line 58- col. 4, line 14). Consequently, the type of polyethylene fibers disclosed in Kavesh, although heat shrinkable at temperatures of 120-155°C , would melt and be damaged by high-temperature exhaust gases in the range of 330 to 550°C. Consequently, the use of polyethylene fibers would be against the teachings of Fischer to modify the cloth as suggested. Therefore, a *prima facie* case of obviousness is not supported by the combination of Fischer with Kavesh. Withdrawal of the rejection of claims 5, 10 and 14 is respectfully requested.

II. CONCLUSION

In view of the foregoing amendments and remarks, Applicant submits that this application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-14 are respectfully requested.

Should the Examiner believe that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Robert A. Miller
Registration No. 32,771

JAO:RAM:SSK/lrd

Attachment:
Appendix

Date: March 19, 2003

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
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APPENDIX

Changes to Claims:

The following is a marked-up version of the amended claims:

1. (Twice Amended) A filter cloth composed of a plurality of yarns in the transverse and the longitudinal directions, the filter cloth comprising a filtering portion having a structure and density according to desired filtering characteristics for separating liquid from a mixture consisting of solids and liquid, and which filter cloth is further to be arranged against a filtering element in a filtering apparatus, and an underside of the filter cloth, i.e., a portion facing the filtering element, comprises substantially parallel yarns that are thicker than the rest of the yarns of the cloth, and that the thicker yarns are placed at predetermined intervals defined by the other yarns of the filter cloth extending parallel thereto to form parallel channels therebetween in order to enable the filtered liquid to flow in the direction of the surface of the filtering element between the filtering portion of the filter cloth and the filtering element.

7. (Twice Amended) A filtering module to be arranged on a filtering element as a filtering surface when liquid is separated from a mixture consisting of solids and liquid by means of a filtering apparatus, which filtering module is made of filter cloth comprising a filtering layer composed of yarns in the transverse and the longitudinal directions, and an underside of the filter cloth, i.e., the surface to be against the filtering element, is comprised of substantially parallel yarns that are thicker than the other yarns of the filter cloth, and that channels are formed between the thicker yarns by the placement of the thicker yarns at predetermined intervals defined by the other yarns of the filter cloth extending parallel thereto, wherein the liquid filtered by the cloth is allowed to flow in the direction of a surface of the filtering element.

11. (Amended) A filtering apparatus, comprising:

a filtering module; and

a filtering element, wherein the filtering module is arranged on a filtering element as a filtering surface where liquid is separated from a mixture consisting of solids and liquid where, the filtering module is made of a filter cloth comprising a filtering layer composed of yarns in the transverse and the longitudinal directions, and an underside of the filter cloth, i.e. the surface to be against the filtering element, comprises of substantially parallel yarns that are thicker than the other yarns of the filter cloth, and channels are formed between the thicker yarns by the placement of the thicker yarns at predetermined intervals defined by the other yarns of the filter cloth extending parallel thereto, wherein the liquid filtered by the filter cloth is allowed to flow in the direction of a surface of the filtering element.

12. (Amended) The filtering apparatus as claimed in claim 11, wherein ~~a~~the filtering module is arranged such that the channels in the bottom of the cloth are directed according to a structure of the filtering module.

13. (Amended) The filtering apparatus as claimed in claim 11, wherein ~~a~~the filtering module is arranged such that the channels in the bottom of the cloth are directed such that the channels lead the filtered liquid to openings in the filtering element.